

What is claimed is:

1 1. A user authentication method for checking whether a
2 user is qualified for using a service provided through a network,
3 comprising:

4 a step of registration of user authentication information
5 to register a numerical calculation method designated by said user
6 and being specific to said user as said user authentication
7 information together with user identification information
8 corresponding to said user; and

9 a step of judging, when said user identification
10 information is transmitted from said user through said network
11 to a service providing site and an arbitrary numeric value is
12 transmitted from said service providing site through said network
13 to said user, whether a first calculation result obtained by using
14 said arbitrary numeric value which has been transmitted from said
15 user through said network to said service providing site agrees
16 with a second calculation result obtained by applying said
17 arbitrary numeric value to said registered numerical calculation
18 method to perform user authentication.

1 2. A user authentication method for checking whether a
2 user is qualified for using a service provided through a network,
3 comprising:

4 a step of registration of user authentication information
5 to register a numerical calculation method designated by said user
6 through said network and being specific to said user as said user
7 authentication information together with user identification
8 information corresponding to said user; and

9 a step of judging, when said user identification
10 information is transmitted from said user through said network
11 to a service providing site and an arbitrary numeric value is
12 transmitted from said service providing site through said network
13 to said user and a first calculation result corresponding to said
14 arbitrary numeric value is transmitted from said user through said
15 network to said service providing site, whether said first
16 calculation result agrees with a second calculation result
17 obtained by applying said arbitrary numeric value to said
18 registered numerical calculation method to perform said user
19 authentication.

1 3. A network system comprising:

2 one or a plurality of user terminals by which a user
3 transmits a numerical calculation method being specific to said
4 user together with user identification information corresponding
5 to said user through a network to a service providing site and
6 transmits a first calculation result obtained by applying a given
7 numeric value to said numerical calculation method through said
8 network to said service providing site;

9 one or a plurality of service providing sites to register
10 said numerical calculation method together with said user
11 identification information corresponding to said user, to
12 transmit an arbitrary numeric value through said network to said
13 user terminal when said user identification information is
14 transmitted from said user terminal through said network and to
15 judge, when said first calculation result corresponding to said
16 arbitrary numeric value is transmitted from said user terminal
17 through said network, whether said first calculation result

18 agrees with a second calculation result obtained by applying said
19 arbitrary numeric value to said registered numerical calculation
20 method to perform said user authentication.

1 4. The network system according to Claim 3, wherein said
2 user terminal has a function of displaying said arbitrary numeric
3 value transmitted from said service providing site.

1 5. The network system according to Claim 3, wherein said
2 user terminal has a function of outputting, by voice, said
3 arbitrary numeric value transmitted from said service providing
4 site.

1 6. The network system according to Claim 3, wherein said
2 user terminal is made up of a portable cellular phone or a personal
3 digital assistant, having a function of displaying said arbitrary
4 numeric value transmitted from said service providing site.

1 7. The network system according to Claim 3, wherein said
2 user terminal is made up of a portable cellular phone or a personal
3 digital assistant, having a function of outputting, by voice, said
4 arbitrary numeric value transmitted from said service providing
5 site.

1 8. The network system according to Claim 3, wherein said
2 first calculation result is input by voice of said user to said
3 user terminal and is transmitted through said network to said
4 service providing site and wherein said service providing site
5 has a function of performing voice recognition of said first

6 calculation result.

1 9. A storage medium storing a control program to have
2 a computer carry out a user authentication method for checking
3 whether a user is qualified for using a service provided through
4 a network, said method comprising:

5 a step of registration of user authentication information
6 to register a numerical calculation method designated by said user
7 and being specific to said user as said user authentication
8 information together with user identification information
9 corresponding to said user; and

10 a step of judging, when said user identification
11 information is transmitted from said user through said network
12 to a service providing site and an arbitrary numeric value is
13 transmitted from said service providing site through said network
14 to said user, whether a first calculation result obtained by using
15 said arbitrary numeric value which has been transmitted from said
16 user through said network to said service providing site agrees
17 with a second calculation result obtained by applying said
18 arbitrary numeric value to said registered numerical calculation
19 method to perform user authentication.

1 10. A storage medium storing a control program to have
2 a computer carry out a user authentication method for checking
3 whether a user is qualified for using a service provided through
4 a network, said method comprising:

5 a step of registration of user authentication information
6 to register a numerical calculation method designated by said user
7 through said network and being specific to said user as said user

8 authentication information together with user identification
9 information corresponding to said user; and
10 a step of judging, when said user identification
11 information is transmitted from said user through said network
12 to a service providing site and an arbitrary numeric value is
13 transmitted from said service providing site through said network
14 to said user and a first calculation result corresponding to said
15 arbitrary numeric value is transmitted from said user through said
16 network to said service providing site, whether said first
17 calculation result agrees with a second calculation result
18 obtained by applying said arbitrary numeric value to said
19 registered numerical calculation method to perform said user
20 authentication.

1 11. A storage medium storing a control program to have
2 a computer carry out a network system comprising:

3 one or a plurality of user terminals by which a user
4 transmits a numerical calculation method being specific to said
5 user together with user identification information corresponding
6 to said user through a network to a service providing site and
7 transmits a first calculation result obtained by applying a given
8 numeric value to said numerical calculation method through said
9 network to said service providing site;

10 one or a plurality of service providing sites to register
11 said numerical calculation method together with said user
12 identification information corresponding to said user, to
13 transmit an arbitrary numeric value through said network to said
14 user terminal when said user identification information is
15 transmitted from said user terminal through said network and to

16 judge, when said first calculation result corresponding to said
17 arbitrary numeric value is transmitted from said user terminal
18 through said network, whether said first calculation result
19 agrees with a second calculation result obtained by applying said
20 arbitrary numeric value to said registered numerical calculation
21 method to perform said user authentication.